

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

What is claimed is:

1. (currently amended) A processor comprising:
at least one local store storage designed to contain a plurality of floating point values;
at least one floating point execution unit, said floating point execution unit
further including a separator configured to retrieve said plurality of floating point values from
said local store storage and make available a mantissa portion from and corresponding to
each of said plurality of floating point values, said floating point execution unit further
including at least one adder unit configured to receive said mantissas in an order and number
determined by said adder unit;
a compare unit operatively coupled to said at least one local store storage further
comprising a separator configured to retrieve said plurality of floating point values from said
local store storage and make available at least a mantissa portion of each of said floating
point values, and a comparison unit configured to make available a carry-out bit value
resulting from an addition of said mantissas portions;
an end-around-carry bit calculator unit operatively coupled to said compare unit and
configured to provide a correct value of an end-around-carry calculation available as output,
based on values received from said compare unit; and
a rounding calculator operatively coupled to the end-around-carry bit calculator to
calculate a rounding choice prior to the adder unit completing the addition and
communicating the choice to the adder unit.
2. (original) The processor of claim 1 where said compare unit further comprises
as a component contained therein said end-around-carry bit calculator unit.
3. (original) The processor of claim 1 where said at least one floating point
execution unit further comprises as a component therein said end-around-carry bit calculator
unit.

4. (currently amended) A machine readable medium containing a data structure having an instruction therein for determining which values from a local ~~store~~ storage containing floating point values to send to a floating point execution unit, and in parallel to a compare unit, where said compare unit and said floating point execution unit are operatively coupled to an ~~EAC~~ end-around-carry value calculator and a rounding calculator that is operatively coupled to the end-around-carry value calculator.

5. (original) A method for providing a correct rounding choice for floating point subtraction comprising:

- (a) providing a first floating point value having a sign, an exponent, and a mantissa;
- (b) providing a second floating point value having a second sign, a second exponent, and a second mantissa;
- (c) performing a compare of said two floating point values while starting a subtraction of said first and second mantissas;
- (d) calculating an end-around-carry value using results from said compare;
- (e) using said end-around-carry value using results from said compare; and
- (f) providing said rounding choice before said subtraction is complete.

6. (currently amended) A method for providing increased parallelism in a processor comprising:

- (a) providing a first floating point value having a sign, an exponent, and a mantissa;
- (b) providing a second floating point value having a second sign, a second exponent, and a second mantissa;
- (c) starting in parallel a compare of said first and second floating point values, and an addition of said first and second floating point values, where said addition is using the 2's compliment form of said second mantissa;
- (d) using said compare results to calculate an end-around-carry value; and
- (e) providing a rounding choice before said addition is completed.

7. (currently amended) A method for computing a floating point subtraction comprising:

- (a) providing a first floating point value having a sign, an exponent, and a mantissa;

- (b) providing a second floating point value having a second sign, a second exponent, and a second mantissa;
- (c) performing a compare of said two floating point values and providing the output of said compare to an end-around-carry calculator unit;
- (d) calculating an end-around-carry value in said end-around-carry calculator unit;
- (e) sending said first and second mantissas to an adder;
- (f) aligning said second mantissa to said first mantissa in said adder;
- (g) starting an addition of said first mantissa and a two's compliment form of said second mantissa in said adder;
- (h) providing said calculated end-around-carry value ~~before said addition completes~~;
- (i) using said end-around-carry value to calculate a GRS Guard Round Sticky and determine a rounding choice before said addition is completed;
- (j) completing said addition in said adder;
- (k) using said rounding choice to choose a correct rounded answer from said addition as soon as said addition is completed; and
- (l) providing a final answer using said rounding choice, said first and second signs, and said first and second exponents.
- (e) ~~having an end-around carry value before said addition completes.~~